

PENNDOT e-Notification

Bureau of Design
Engineering Computing Management Division



BRADD

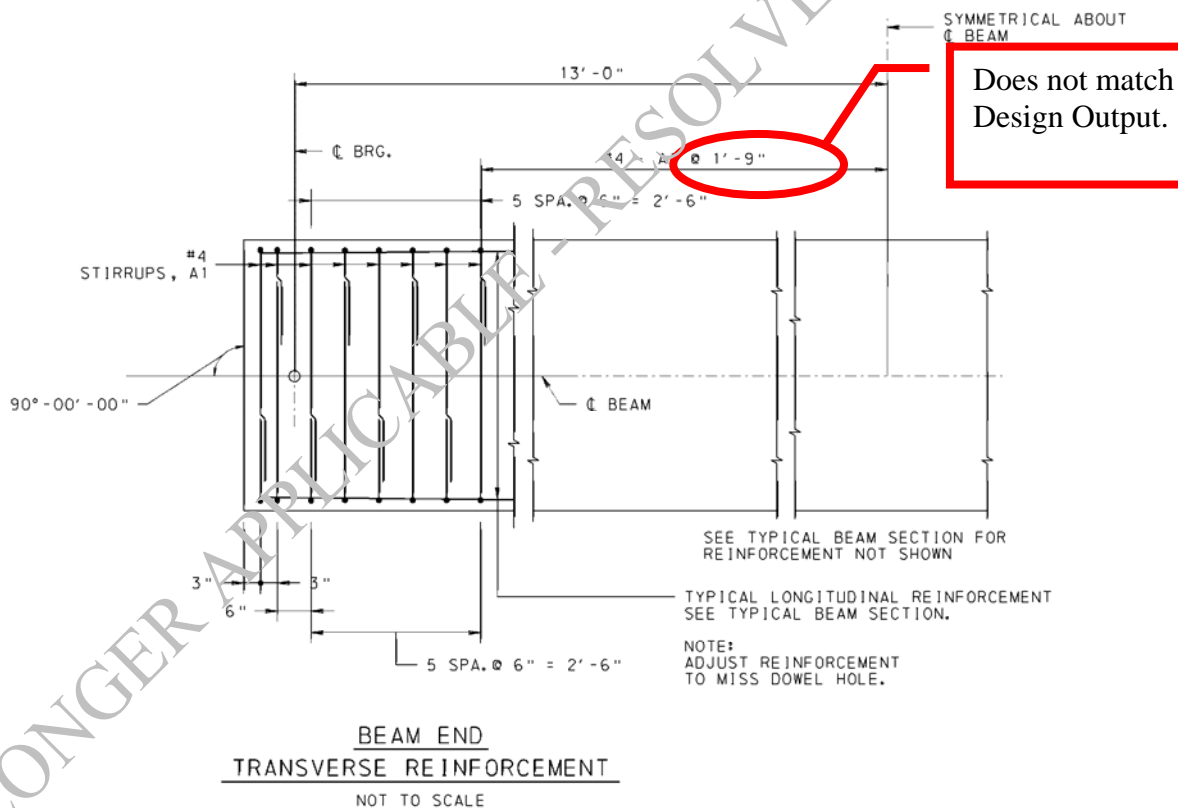
No. 008

September 14, 2005

Problem with Shear Stirrup Spacing for Plank Beams

Problem Statement:

The detailing of the shear stirrup spacing on BRADD generated drawings is not correct for prestressed plank beams. BRADD produces a "BEAM END TRANSVERSE REINFORCEMENT" drawing as shown below. The spacing shown does not match the Design Output spacing.



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A typical PSLRFD program output for a plank beam showing the shear reinforcement stirrup spacing is shown below:

SHEAR REINFORCEMENT AND RESISTANCE

Span No.	Distance (ft)	Shear Reinforcement		Shear Resistance Provided By:			
		Stirrup Area A(v) (in ²)	Stirrup Spacing s (in)	Concrete V(c) (kips)	P/S Force V(p) (kips)	Shear Reinf. V(s) (kips)	Gov. Limit State
1	0.000	*****	*****	Not	Applicable	*****	*****
	0.902<	0.40	6.00	126.53	0.00	86.58	1
	1.000	0.40	6.00	126.89	0.00	86.68	1
	1.300	0.40	6.00	128.12	0.00	87.05	1
	2.600	0.40	6.00	137.26	0.00	89.89	1
	3.900	0.40	6.00	137.26	0.00	89.89	1
	5.200	0.40	6.00	136.53	0.00	89.65	1
	6.500	0.40	6.00	132.04	0.00	88.25	1
	7.800	0.40	6.00	128.56	0.00	87.19	1
	9.100	0.40	6.00	126.09	0.00	86.44	1
	10.400	0.40	6.00	115.60	0.00	80.20	1
	11.700	0.40	6.00	111.79	0.00	78.10	1
	13.000	0.40	6.00	116.39	0.00	80.65	1
	14.300	0.40	6.00	111.79	0.00	78.10	1
	15.600	0.40	6.00	115.60	0.00	80.20	1
	16.900	0.40	6.00	126.09	0.00	86.44	1
	18.200	0.40	6.00	128.56	0.00	87.19	1
	19.500	0.40	6.00	132.04	0.00	88.25	1
	20.800	0.40	6.00	136.53	0.00	89.65	1
	22.100	0.40	6.00	137.26	0.00	89.89	1
	23.400	0.40	6.00	137.26	0.00	89.89	1
	24.700	0.40	6.00	128.12	0.00	87.05	1
	25.000	0.40	6.00	126.89	0.00	86.68	1
	25.098<	0.40	6.00	126.53	0.00	86.58	1
	26.000	*****	*****	Not	Applicable	*****	*****

For this example, the BRADD design drawings should be #4 - A1 @ 6" instead of #4 - A1 @ 1'-9".

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Problem Workaround:

For all BRADD jobs that use the 12" prestressed plank beam, the Designer must modify the BRADD generated drawings to match the results from the PSLRFD design output files.

Problem Resolution:

BRADD will be corrected for this problem as a part of the next release of BRADD.

NOTE: This problem exists in both Version 3.1.1.0 and Version 3.1.0.2.

Please direct any questions to:

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